

Application No. 10/678,527  
Amendment dated December 6, 2005  
Reply to Office Action dated September 6, 2005

**Amendments to the Claims**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims**

1. (original) A sensor comprising:  
a substrate;  
a pixel situated on a single level on the substrate; and  
an electronics circuit situated on the single level.
2. (original) The sensor of claim 1, wherein the pixel has a fill factor greater than 69 percent.
3. (original) The sensor of claim 2, wherein the pixel is an infrared light detector.
4. (original) The sensor of claim 3, wherein the substrate has a pit proximate to the pixel.
5. (original) The sensor of claim 4, wherein the pixel has at least one via in the one level supporting the pixel.
6. (original) The sensor of claim 5, wherein the electronics circuit comprises a FET circuit.
7. (original) The sensor of claim 5, wherein the electronics comprises a bipolar transistor circuit.
8. (currently amended) The sensor of claim 6, wherein the electronics circuit comprises at least one small area FET, leaving a significant portion of the substrate free of circuits.

Application No. 10/678,527  
Amendment dated December 6, 2005  
Reply to Office Action dated September 6, 2005

9. (original) The sensor of claim 8, wherein the electronics is CMOS circuitry.
10. (original) The sensor of claim 9, wherein the pixel is a microbolometer.
11. (original) A thermal sensor comprising:  
a substrate; and  
an array of pixels situated on the substrate; and  
wherein:  
each pixel is located on a single level;  
an electronic circuit is associated with each pixel; and  
each electronic circuit is located on the single level with the pixel.
12. (original) The sensor of claim 11, wherein each pixel is an infrared light detector.
13. (original) The sensor of claim 12, wherein each pixel is suspended over a pit in the substrate.
14. (original) The sensor of claim 13, wherein each electronic circuit is CMOS FET circuitry.
15. (original) The sensor of claim 14, wherein each pixel is a microbolometer.
16. (original) A sensing means comprising:  
means for sensing infrared light;  
means for electronically processing signals related to infrared light sensed by the  
means for sensing infrared light; and

Application No. 10/678,527  
Amendment dated December 6, 2005  
Reply to Office Action dated September 6, 2005

means for supporting on one level the means for sensing infrared light and the means for electronically processing signals.

17. (original) The means of claim 16, wherein the means for supporting on one level supports the means for sensing infrared light over a thermal isolating opening.

18. (original) The means of claim 17, wherein the means for electronically processing signals has an area that is a fraction of the area of the means for sensing infrared light.

19. (original) The means of claim 18, wherein the means for sensing infrared light is an array of pixels.

20. (currently amended) The means of claim 19, wherein:

each pixel of the array of pixels is a microbolometer pixel comprising VO<sub>x</sub>; and  
the means for electronically processing signals is small area transistor circuitry  
that leaves a significant portion of the means for supporting free of  
circuits.

21. (original) The means of claim 20, wherein the small area transistor circuitry is CMOS FET circuitry.

22. (original) The means of claim 21, wherein:

the means for supporting on one level is a planar level substrate; and  
the thermal isolating opening is a pit in the substrate under each pixel of the array  
of pixels.

23. (original) A sensor comprising:

a substrate;

Application No. 10/678,527  
Amendment dated December 6, 2005  
Reply to Office Action dated September 6, 2005

a pixel situated in a first plane relative to a surface of the substrate; and  
an electronics circuit situated in the first plane.

24. (original) A thermal sensor comprising:

a substrate; and

an array of pixels situated on the substrate; and

wherein:

each pixel is located on a first surface;

an electronic circuit is associated with each pixel; and

each electronic circuit is located on the first surface proximate to the pixel.

25. (original) A thermal sensor comprising:

a substrate; and

an array of pixels situated on the substrate; and

wherein:

an electronic circuit is associated with each pixel; and

each electronic circuit is situated horizontally proximate to the pixel.

26. (original) A thermal sensor comprising:

a substrate; and

an array of pixels situated on the substrate; and

electronics situated on the substrate horizontally proximate to the array of pixels.

27. (original) A sensing means comprising:

means for sensing infrared light;

means for electronically processing signals related to infrared light sensed by the

means for sensing infrared light; and

Application No. 10/678,527  
Amendment dated December 6, 2005  
Reply to Office Action dated September 6, 2005

means for supporting on one surface the means for sensing infrared light and the  
means for electronically processing signals.

28. (original) A sensing means comprising:

means for sensing infrared light;  
means for electronically processing signals related to infrared light sensed by the  
means for sensing infrared light; and  
means for supporting the means for sensing infrared light and the means for  
electronically processing signals horizontally proximate to each other.

29. (original) A sensing means comprising:

means for sensing infrared light;  
means for electronically processing signals related to infrared light sensed by the  
means for sensing infrared light; and  
means for supporting in a plane the means for sensing infrared light and the  
means for electronically processing signals.